

REMARKS

Claims 1-20 are pending. By this Amendment, claims 1, 8 and 20 are amended. Support for the amendments can be found, for example, in at least at Fig. 1. No new matter is added. Reconsideration in view of the foregoing amendments and the following remarks is respectfully requested.

Entry of the amendments is proper under 37 CFR §1.116 because the amendments: (a) place the application in condition for allowance (for the reasons discussed herein) and (b) do not raise any new issue requiring further search and/or consideration (as the amendments amplify issues previously discussed throughout prosecution). The amendments are necessary and were not earlier presented because they are made in response to arguments raised in the final rejection. Entry of the amendments is thus respectfully requested.

The courtesies extended to Applicants' representative by Examiner Zhu at the interview held November 25, 2008, are appreciated. The reasons presented at the interview as warranting favorable action are incorporated into the remarks below, which constitute Applicants' record of the interview.

I. Claims 1-20 Define Patentable Subject Matter

The Office Action rejects claims 1-9 and 14-20 under 35 U.S.C. §103(a) as being unpatentable over Klassen (U.S. Patent No. 6,345,117) in view of Decker (U.S. Patent No. 6,198,549) and Castelli (U.S. Patent No. 5,748,221). The Office Action rejects claims 10-13 under 35 U.S.C. §103(a) under Klassen, Decker, Castelli in view of the Official Notice. Applicants respectfully traverse these rejections.

By this amendment, claim 1 is amended for improved clarity and to expedite prosecution of this application. Claim 1, as amended, now recites forming a registration patch with the image forming system on a recording medium. Claims 2-20 substantively recite similar features.

Klassen, Decker and Castelli, either alone or in combination, do not disclose or suggest "forming a registration patch on a recording medium," and "obtaining a degree of color misregistration based on known dimensions of the registration patch and an amount of color shift, that is represented by a ΔE color difference, between the detected color value and the combined color value," as recited in independent claim 1 and similarly recited in independent claims 8 and 20 (emphasis added).

1. Klassen does not disclose a registration patch

The Office Action acknowledges that Klassen does not disclose or suggest "forming a ... registration patch," as recited by independent claims 1, 8 and 20. Nonetheless, the Office Action asserts Klassen discloses several other claimed features (such as forming, detecting, and comparing the registration patch) by asserting that Klassen discloses these features in other situations. However, divorcing the recited forming, detecting and comparing features from the recited registration patch feature distorts the meaning of the claims. As discussed further below, an integral part of the claimed invention is its ability to form a registration patch and use the patch to detect outputted color values. Since the formation, detection and comparison of the registration patch is an integral component of the claimed features, the Office Action's attempt to apply Klassen to the claimed features by simply removing and/or replacing all references to the "registration patch" is improper.

2. Klassen does not disclose or suggest forming a registration patch.

Klassen does not disclose the forming a registration patch, as recited in independent claim 1, and similarly recited in independent claim 20. The Office Action acknowledges that Klassen does not disclose "forming a ... registration patch," but asserts that Klassen discloses the recited "forming" feature. Specifically, the Office Action asserts that Klassen discloses a method for detecting color misregistration by forming a "registration image."

Klassen discloses "forming a digital representation of a scanned input image." See, col 10, lns. 42-62 of Klassen. However, forming a digital representation of a scanned image merely describes the two steps of what is referred to in the vernacular as scanning an image. Specifically, Klassen discloses the mechanical act of scanning the image, followed by the digital step of "forming" the scanned images in memory.

However, scanning and digitalizing an image to be printed is not the same as forming a registration patch. Furthermore, Klassen does not disclose using the scanned image to evaluate the accuracy or color misregistration of any device. Therefore, Applicants assert the Office Action uses flawed logic to link the scanned image disclosed in Klassen to the recited "forming a ... registration patch". Accordingly, Applicants assert Klassen does not disclose the forming a registration patch, as recited in independent claim 1, and similarly recited in independent claims 8 and 20.

3. Klassen does not disclose detecting a color value from a registration patch.

The Office Action also asserts that Klassen discloses the recited step of "performing spectrophotometric analysis on the registration patch to detect a detected color value." However, as previously discussed, Klassen does not disclose using registration patches and therefore cannot detect outputted color values by analyzing such patches.

Klassen discloses a system that estimates the likelihood of visible distortions by using a color table and printer specific misregistration information. However, Klassen does not detect color values. Rather, Klassen calculates the likelihood of an error occurring and attempts to prevent misregistration. Accordingly, Klassen fails to disclose performing spectrophotometric analysis on the registration patch to detect a detected color value, as recited in independent claim 1, and similarly recited in independent claims 8 and 20.

4. Klassen does not disclose comparing detected color values.

The Office Action asserts that Klassen, in col 14 ln. 1-14 discloses "comparing a maximum value of visibility vector with a threshold value to determine whether misregistration occurs." See Office Action, pg. 3-4. However, the cited passage was taken out of context and lacks clarity. The section cited by the examiner more accurately states:

a Visibilityvector is constructed from two colors (a, b) and the list of misregistration colors, and a list of values is built which correspond to the visibilities of all the misregistration colors. If the maximum entry in the Visibilityvector is less than a threshold value t (FIGS. 4 and 5, step 204), the misregistration will not be visible. No action is taken at these two colors, and the next set of two colors is reviewed.

Thus, the cited section discloses constructing a "Visibilityvector" from two colors that are to be printed (a, b) and a list of known misregistration colors. From this "Visibilityvector," a list is created corresponding to the likelihood of distortions resulting from overlaying the desired colors (a, b). From analyzing this "Visibilityvector," it is determined whether printing the desired colors (a, b) side-by-side is likely to result in a distortion.

Thus, under Klassen, no actual misregistration is detected. Rather, the likelihood of potential misregistration errors is calculated based on two colors that the system intends to print next to one another. Therefore, Klassen fails to disclose or suggest determining if color misregistration has occurred by comparing the detected color value with the combined color value, as recited in independent claim 1. Accordingly, Applicants assert Klassen fails to disclose any of the above-mentioned features.

5. Decker and Castelli fail to cure the deficiencies of Klassen.

Decker simply discloses a method for detecting misregistration "by measuring density values using an optical densometer." See col. 2, lines 28-30. Decker discloses calculating a

misregistration error defined by a linear scaling of a density difference across an image. Thus, the densometer device used to obtain misregistration, as taught by Decker, cannot be used to measure color differences. Accordingly, Decker does not disclose detecting a detected color value and obtaining a degree of color misregistration based on an amount of color shift, that is represented by a ΔE color difference, as recited in independent claim 1, and similarly recited in independent claims 8 and 20.

Castelli does not make up for the above-noted deficiencies of Decker. Castelli does not disclose measuring color values, nor does Castelli disclose or suggest determining if color misregistration has occurred by comparing the detected color value with the combined color value. Rather, Castelli merely discloses detecting if misregistration has occurred by using the chevron mark technology and bi-cell detectors, and simply compares timing patterns of photo diodes. Therefore, Castelli does not disclose or suggest determining if color misregistration has occurred by comparing the detected color value with the combined color value, as recited in independent claim 1 and similarly recited in independent claims 8 and 20.

II. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-20 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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